



GUIDELINES FOR ESTIMATING DAIRY PRODUCTION COSTS BASED ON A 50 COW HERD

Information Update

DATE: January, 1989

This guide is designed to provide planning information and a format for calculating costs of production on a dairy enterprise. This guideline is based on a 50 cow herd with an average daily production of 20.3 litres and an average annual production of 6300 litres at 3.6 kg. B.F./hl. The production costs included in this budget are not intended as a cost study of the dairy industry in Manitoba.

The guidelines can be useful for comparison purposes. Comparison of costs can be made with other farms or with one farm over a number of time periods. Projected plans can be compared with actual happenings as they unfold.

The assumptions on which costs were calculated are clearly defined in the supporting pages. Investment costs and labour rates may differ substantially for each operation. They were developed by using a combination of recommended practices and information obtained from a select group of producers. When interpreting these costs for an individual situation, adjustments may be required. Each assumption must be examined and adjustments made where necessary.

DAIRY PRODUCTION COSTS (50 COW HERD)
(includes milking and dry cows only)

A. OPERATING COSTS	Per Cow	Your Costs
1) Feed Costs:		
Forage	\$ 480.00	\$ _____
Dairy Ration	464.38	_____
Protein Supplement	92.00	_____
Dry Cow Grain Mix	14.00	_____
Salt & Minerals & Vitamins	19.80	_____
Subtotal Feed Costs	\$1,070.18	\$ _____
2) Other Operating Costs:		
Milk Recording & Registration	\$ 25.00	\$ _____
Bedding	25.00	_____
Veterinary & Medicine	46.00	_____
Breeding	45.00	_____
Dairy Supplies	65.00	_____
Marketing & Transportation	296.10	_____
Bldgs, Equip. & Mach. Repairs & Maint.	124.00	_____
Utilities	66.00	_____
Insurance	29.56	_____
Replacement Cost	174.50	_____
Miscellaneous	32.00	_____
Subtotal Other Operating Costs . . .	\$ 928.16	\$ _____
Interest on Operating	11.66	_____
TOTAL OPERATING COSTS	\$2,010.00	\$ _____
B. FIXED COSTS		
(1) Depreciation: a) Buildings	\$ 87.62	\$ _____
b) Equipment & Mach.	130.50	_____
* (2) Investment: a) Buildings	\$ 107.09	_____
b) Equipment & Mach.	79.75	_____
c) Livestock	150.00	_____
TOTAL FIXED COSTS	\$ 554.96	\$ _____
TOTAL OPERATING & FIXED COSTS	\$2,564.96	\$ _____
C.* LABOUR COST		
62 hrs/cow @ \$9.60/hr	\$ 595.20	\$ _____
TOTAL COST OF PRODUCTION.	\$3,160.16	\$ _____

Breakeven Required To Cover: (based on 6,300 litres)	Per hl	
Feed	\$16.99	\$ _____
Other Operating & Interest.	14.92	_____
Fixed	8.81	_____
Labour	9.45	_____
TOTAL	\$50.17	_____

* Investment and labour costs.

FEED REQUIREMENTS

ASSUMPTIONS:

600 kg cow produces 20.3 litres/day of 3.6 kg B.F. per hectolitre. An annual milk production of 6,300 litres or 63.0 hl/cow.

Forages, dairy ration and supplement are valued at current market price.

Forage fed - good quality alfalfa: grass hay 90% dry matter (DM), 16% crude protein (CP), 60% total digestible nutrients (TDN) on a (DM) basis.

Note: Producers feeding haylage or corn silage, approximate hay equivalents are 1 tonne 90% DM hay = 2 tonnes 45% DM haylage = 3 tonnes 30% DM corn silage.

Lactating Cows Are Fed an average of 7.0 kg/cow/day of a (14-16%) CP dairy ration. During the first 150 to 180 days of lactation, lactating cows receive an additional 1.1 to 1.4 kg/cow/day of a 36 to 44% commercial protein supplement as a topdress.

Dry Cows Are Fed a total of 100 kg of a dry cow grain mix (i.e. carrier of minerals and vitamins; lead-feeding) during a 50-55 day dry period.

FORAGE (includes 10% wastage)

16.4 kg hay/day X 365 days = 6.0 tonnes hay/cow/year
6.0 tonnes hay @ \$80/tonne = \$480/cow/year

DAIRY RATION/PROTEIN SUPPLEMENT: (milking cows)

7.0 kg (14-16%) CP ration/cow/day X 310 days = 2.17 tonnes/cow/lactation
2.17 tonnes @ \$214/tonne = \$464.38/cow/lactation

PROTEIN SUPPLEMENT:

1.1 kg 36% -44% protein supplement/cow/day X 180 days = 200 kg/cow/lact.
200 kg @ \$460/tonne = \$92/cow/lactation

DRY COW GRAIN MIX

0.1 tonnes X \$140/tonne = \$14/cow/dry period

SALT/MINERALS/VITAMINS

Salt/minerals/vitamins = approximately 30 kg/cow/year

30 kg X \$16.50/25 kg bag = \$19.80/cow/year

NOTE: 3.0 ounces/cow/day X 365 days = 1,095 ounces/cow/year

OPERATING COSTS

MILK RECORDING & REGISTRATIONS

Milk Recording	\$1,000
Registrations & Transfers	<u>250</u>
	\$1,250 = \$25/cow

BEDDING

Stanchion barn:

Approximately 1 tonne per cow/year @ \$25/tonne = \$25/cow

VETERINARY & MEDICINE

Drugs - Blackleg, I.B.R., Mastitis, etc. - approximately \$1,200.
Service - \$57/hour assumed 12 visits (assumed 2 hours/visit for first three trips, 1 hour/visit for remaining trips) = 15 hours.
Mileage - \$1 per km one way. Assumed round trip distance to be 40 km.
= \$46/cow

BREEDING COST

Costs vary depending upon: (1) price/vial of semen, (2) service charge/visit, and (3) number of services/conception. Assumed 1.5 services @ \$15/vial of semen and \$15/visit.

Semen:	\$22.50 (\$15 x 1.5)
Services:	<u>22.50</u> (\$10 x 1.5)

Total Costs: \$45/cow

DAIRY SUPPLIES

Chlorine, Filters, Soap, Acid, Udder Wash, Teat Dip, inflations, hoses, etc. approximately \$3,250/herd/year or \$65/cow.

MARKETING & TRANSPORTATION COSTS

	<u>Cost/hl</u>
Milk Hauling	\$2.01
M.S.Q. Administration	0.08
Administration (Pool, Board)	0.34
Market Expansion	0.59
CDC Levy	<u>1.68</u>

\$4.70 per hl. or \$296.10/cow

Cost/hl for market expansion is currently under review and is subject to change in early 1989.

BLDG, EQUIP. & MACH REPAIRS & MAINT.

Three to four percent of buildings and equipment repairs and maintenance are based on average annual investment in buildings and equipment or one half of new costs. For purposes of this budget we have assumed \$3,400 for the herd as adequate for this cost or **\$68.00/cow**.

Truck and Tractor, fuel, repairs, maintenance, insurance, license. It is estimated that a tractor will be used for 500 hours and truck will travel 16,000 km per year. Assume \$2,800 for herd or **\$56/cow**.
Total = **\$124/cow**

UTILITIES

Hydro and telephone were estimated from producer records. It is estimated that a 50 cow herd will utilize 50,000 kW.h./yr @ \$0.052/kW.h. = \$2,600 and \$700 for telephone. For purposes of this budget \$3,300 for the herd was assumed or **\$66/cow**.

INSURANCE - fire, hail and wind

Herd

Building & Equipment . . \$173,802 @ \$0.60/\$100 of coverage \$1,042.81

Livestock \$75,000 @ \$0.54/\$100 of coverage \$ 405.00

Public Liability approximately \$ 30.00

TOTAL \$1,477.81
or
\$29.56/cow

REPLACEMENT COST

Assumed culling rate of 24%. Therefore 12 cows of the 50 were replaced each year. It was further assumed that 1 of the 12 culls died.

Buy 12 replacement cow @ \$1,300 \$15,600
Sell 11 cull cows @ \$625 - 6,875

\$ 8,725 for herd or \$174.50/cow

MISCELLANEOUS

Accounting, office supplies, small tools & hardware estimated at \$1,600 or **\$32/cow**.

INTEREST ON OPERATING

Interest was calculated by taking 1/2 of the operating costs and multiplying it by a monthly interest rate of 14% per annum.

LABOUR

Dairy Relief Milker rate. Farmer pays \$76.80/day or \$9.60/hour.

Assumed 8.5 hours/day or 62 hrs/cow/year @ \$9.60 = **\$595.20/cow**.

FIXED COSTS

DEPRECIATION - Buildings & Equipment

- 10 year straight line on equipment.
- 20 year straight line on buildings.

$$\frac{\text{Original Cost} - \text{Salvage Value}}{\text{Useful Life}}$$

$$\text{Buildings: } \frac{\$97,354 - 9,735}{20} = \$4,380/\text{herd/year or } \$87.62/\text{cow/year}$$

$$\text{Equipment: } \frac{\$72,500 - 7,250}{10} = \$6,525/\text{herd/year or } \$130.50/\text{cow/year}$$

& Machinery

INVESTMENT

Buildings & Equipment

- The average value of buildings and equipment at a rate of 10% was used.

$$\frac{\text{Original Cost} + \text{Salvage Value}}{2} \times 10\%$$

$$\text{Buildings: } \frac{\$97,354 + 9,735}{2} \times 0.10 = \$5,354/\text{herd/yr. or } \$107.09/\text{cow/yr.}$$

$$\text{Equipment: } \frac{\$72,500 + 7,250}{2} \times 0.10 = \$3,588/\text{herd/yr. or } \$79.75/\text{cow/yr.}$$

& Machinery

LIVESTOCK

- Assumed a purebred herd of 50 cows valued at \$1500/cow = \$75,000 for the herd.
- The investment on the herd was calculated using 10% interest cost.
\$75,000 @ 10% = \$7,500 for herd or \$150/cow/year.

CAPITAL COSTS
(Buildings and Equipment Assumed New)
for a 50 Cow Herd

BUILDINGS

Barn - single storey 40' X 126' @ \$13/ft ²	\$ 65,520
(includes concrete, materials, air intakes & labour)	
Milkhouse - 18' X 22' @ \$31.50/ft ²	12,474
(includes concrete, materials, septic tank & labour)	
Hay Shed - 36' X 96' (includes concrete, materials & labour).	16,000
Steel Grain Bin - 11 tonne capacity	3,360
(includes bin, augers, ladder, foundation & labour)	
TOTAL BUILDINGS	\$ 97,354

EQUIPMENT & MACHINERY

Barn Equipment:

- 50 comfort stalls (i.e. 4' X 5'10" to 6'0")	} 7,500
- 2 maternity pens (10' X 12')	
- plumbing (includes 27 water bowls and piping)	

Equipment:

Complete Milking System (i.e. 2" pipeline with 4 units)	} 65,000
(i.e. stainless steel sink, 40 gallon hot water tank, etc.)	
4 Milk Meters	
Bulk Tank and Accessories	
(i.e. 2725 lit. capacity and 3 H.P. condenser)	
Milk House Equipment	
Pressure System (i.e. 1 1/2 H.P. pump and 100 gallon tank).	
Gutter Cleaner	
Ventilation and Controls	
(includes 3 fans and thermostats)	
Manure Pump and Storage (i.e. pad plus earthen walls)	
Electric Wiring	
TOTAL EQUIPMENT COST	\$ 72,500

MACHINERY

Tractor - \$32,500 @ 20% (dairy share)	6,500
1/2 Ton Truck - \$10,000 @ 50% (dairy share)	5,000
TOTAL MACHINERY	\$ 11,500

Note: In the budget, tractor expenses were estimated using custom rate. Therefore, capital investment costs are not calculated, as they are already included in the custom rate charges.

TOTAL BUILDINGS, EQUIPMENT AND MACHINERY. \$181,354

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FOR FURTHER INFORMATION SEE YOUR LOCAL MANITOBA AGRICULTURE OFFICE.